

9301-237-228 Seqlist.txt

SEQUENCE LISTING

<110> Schadt, Eric E.
Monks, Stephanie A.

**<120> COMPUTER SYSTEMS AND METHODS FOR
INFERRING CASUALITY FROM CELLULAR CONSTITUENT ABUNDANCE DATA**

<130> 9301-237-228

<140> PCT/US2004/017754

<141> 2004-06-04

<150> To be Assigned

<151> 2004-05-28

<150> 60/497,470

<151> 2003-08-21

<150> 60/492,682

<151> 2003-08-05

<160> 24

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<170> FastSEQ for Windows Version 4.0
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<210> 1

<211> 572

<212> PRT

<213> homo sapiens polypeptide

<220>

<223> malic enzyme ME1

<400> 1

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Glu	Glu	Arg 35	Gln	Gln	Leu	Asn	Ile 40	His	Gly	Leu	Leu	Pro 45	Pro	Ser	Phe
Asn	Ser 50	Gln	Glu	Ile	Gln	Val 55	Leu	Arg	Val	Val	Lys 60	Asn	Phe	Glu	His
Leu 65	Asn	Ser	Asp	Phe	Asp 70	Arg	Tyr	Leu	Leu	Leu 75	Met	Asp	Leu	Gln 80	Asp
Arg	Asn	Glu	Lys 85	Leu	Phe	Tyr	Arg	Val 90	Leu	Thr	Ser	Asp	Ile 95	Glu	Lys
Phe	Met	Pro	Ile 100	Val	Tyr	Thr	Pro	Thr 105	Val	Gly	Leu	Ala	Cys 110	Gln	Gln
Tyr	Ser 115	Leu	Val	Phe	Arg	Lys	Pro 120	Arg	Gly	Leu	Phe	Ile 125	Thr	Ile	His
Asp	Arg 130	Gly	His	Ile	Ala	Ser 135	Val	Leu	Asn	Ala	Trp 140	Pro	Glu	Asp	Val
Ile 145	Lys	Ala	Ile	Val 150	Val	Thr	Asp	Gly	Glu	Arg 155	Ile	Leu	Gly	Leu 160	Gly
Asp	Leu	Gly	Cys 165	Asn	Gly	Met	Gly	Ile 170	Pro	Val	Gly	Lys	Leu	Ala 175	Leu
Tyr	Thr	Ala	Cys 180	Gly	Gly	Met	Asn 185	Pro	Gln	Glu	Cys	Leu	Pro 190	Val	Ile
Leu	Asp 195	Val	Gly	Thr	Glu	Asn	Glu 200	Glu	Leu	Leu	Lys	Asp 205	Pro	Leu	Tyr

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 210 215 220
 Leu Asp Glu Phe Met Glu Ala Val Ser Ser Lys Tyr Gly Met Asn Cys
 225 230 235 240
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 245 250 255
 Asn Lys Tyr Arg Asn Gln Tyr Cys Thr Phe Asn Asp Asp Ile Gln Gly
 260 265 270
 Thr Ala Ser Val Ala Val Ala Gly Leu Leu Ala Ala Leu Arg Ile Thr
 275 280 285
 Lys Asn Lys Leu Ser Asp Gln Thr Ile Leu Phe Gln Gly Ala Gly Glu
 290 295 300
 Ala Ala Leu Gly Ile Ala His Leu Ile Val Met Ala Leu Glu Lys Glu
 305 310 315 320
 Gly Leu Pro Lys Glu Lys Ala Ile Lys Lys Ile Trp Leu Val Asp Ser
 325 330 335
 Lys Gly Leu Ile Val Lys Gly Arg Ala Ser Leu Thr Gln Glu Lys Glu
 340 345 350
 Lys Phe Ala His Glu His Glu Glu Met Lys Asn Leu Glu Ala Ile Val
 355 360 365
 Gln Glu Ile Lys Pro Thr Ala Leu Ile Gly Val Ala Ala Ile Gly Gly
 370 375 380
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 385 390 395 400
 Pro Ile Ile Phe Ala Leu Ser Asn Pro Thr Ser Lys Ala Glu Cys Ser
 405 410 415
 Ala Glu Gln Cys Tyr Lys Ile Thr Lys Gly Arg Ala Ile Phe Ala Ser
 420 425 430
 Gly Ser Pro Phe Asp Pro Val Thr Leu Pro Asn Gly Gln Thr Leu Tyr
 435 440 445
 Pro Gly Gln Gly Asn Asn Ser Tyr Val Phe Pro Gly Val Ala Leu Gly
 450 455 460
 Val Val Ala Cys Gly Leu Arg Gln Ile Thr Asp Asn Ile Phe Leu Thr
 465 470 475 480
 Thr Ala Glu Val Ile Ala Gln Gln Val Ser Asp Lys His Leu Glu Glu
 485 490 495
 Gly Arg Leu Tyr Pro Pro Leu Asn Thr Ile Arg Asp Val Ser Leu Lys
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 515 520 525
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 <212> PRT
 <213> mus musculus polypeptide

<220>
 <223> Mod1

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 35 40 45
 Ile Ser Gln Glu Leu Gln Val Leu Arg Ile Ile Lys Asn Phe Glu Arg

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Phe	Met	Pro	Ile	Val	Tyr	Thr	Pro	Thr	Val	Gly	Leu	Ala	Cys	Gln	Gln		
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Tyr	Ser	Leu	Ala	Phe	Arg	Lys	Pro	Arg	Gly	Leu	Phe	Ile	Ser	Ile	His		
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Asp	Lys	Gly	His	Ile	Ala	Ser	Val	Leu	Asn	Ala	Trp	Pro	Glu	Asp	Val		
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Val	Lys	Ala	Ile	Val	Val	Thr	Asp	Gly	Glu	Arg	Ile	Leu	Gly	Leu	Gly		
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Asp	Leu	Gly	Cys	Asn	Gly	Met	Gly	Ile	Pro	Val	Gly	Lys	Leu	Ala	Leu		
			165						170					175			
Tyr	Thr	Ala	Cys	Gly	Gly	Val	Asn	Pro	Gln	Gln	Cys	Leu	Pro	Ile	Thr		
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Leu	Asp	Val	Gly	Thr	Glu	Asn	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Leu	Tyr		
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Ile	Gly	Leu	Arg	His	Arg	Arg	Val	Arg	Gly	Pro	Glu	Tyr	Asp	Ala	Phe		
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Leu	Ile	Gln	Phe	Glu	Asp	Phe	Ala	Asn	Arg	Asn	Ala	Phe	Arg	Leu	Leu		
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Lys	Asn	Lys	Leu	Ser	Asp	Gln	Thr	Val	Leu	Phe	Gln	Gly	Ala	Gly	Glu		
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Val	Phe	Ala	His	Glu	His	Glu	Glu	Met	Lys	Asn	Leu	Glu	Ala	Ile	Val		
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Ala	Phe	Thr	Glu	Gln	Ile	Leu	Lys	Asp	Met	Ala	Ala	Phe	Asn	Glu	Arg		
385					390					395					400		
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Thr	Arg	Glu	Val	Ile	Ser	Gln	Gln	Val	Ser	Asp	Lys	His	Leu	Gln	Glu		
			485						490					495			
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Val	Tyr	Pro	Glu	Pro	Gln	Asn	Lys	Glu	Glu	Phe	Val	Ser	Ser	Gln	Met		
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Tyr	Ser	Thr	Asn	Tyr	Asp	Gln	Ile	Leu	Pro	Asp	Cys	Tyr	Pro	Trp	Pro		
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<212> PRT
<213> homo sapiens polypeptide - ME3

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<223> Xaa = Any Amino Acid

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Leu Leu Pro Pro Lys Ile Glu Thr Gln Asp Ile Gln Ala Leu Arg Phe
35 40 45
His Arg Asn Leu Lys Lys Xaa Thr Ser Pro Leu Glu Lys Tyr Ile Tyr
50 55 60
Ile Xaa Gly Ile Gln Glu Arg Asn Glu Lys Leu Phe Tyr Arg Ile Leu
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Gln Asp Asp Ile Glu Ser Leu Xaa Pro Ile Val Tyr Thr Pro Thr Val
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Gly Leu Ala Cys Ser Gln Tyr Gly His Ile Phe Arg Arg Pro Lys Gly
100 105 110
Leu Phe Ile Ser Ile Ser Asp Arg Gly His Val Arg Ser Ile Val Asp
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Asn Trp Pro Glu Asn His Val Lys Ala Val Val Val Thr Asp Gly Glu
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145 150 155 160
Val Gly Lys Leu Cys Leu Tyr Thr Ala Cys Ala Gly Ile Arg Pro Asp
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Arg Cys Leu Pro Val Cys Ile Asp Val Gly Thr Asp Asn Ile Ala Leu
180 185 190
Leu Lys Asp Pro Phe Tyr Xaa Gly Leu Tyr Gln Lys Arg Asp Arg Thr
195 200 205
Gln Gln Tyr Asp Asp Leu Ile Asp Glu Phe Xaa Lys Ala Ile Thr Asp
210 215 220
Arg Tyr Gly Arg Asn Thr Leu Ile Gln Phe Glu Asp Phe Gly Asn His
225 230 235 240
Asn Ala Phe Arg Phe Leu Arg Lys Tyr Arg Glu Lys Tyr Cys Thr Phe
245 250 255
Asn Asp Asp Ile Gln Gly Thr Ala Ala Val Ala Leu Ala Gly Leu Leu
260 265 270
Ala Ala Gln Lys Val Ile Ser Lys Pro Ile Ser Glu His Lys Ile Leu
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Phe Leu Gly Ala Gly Glu Ala Ala Leu Gly Ile Ala Asn Leu Ile Val
290 295 300
Xaa Ser Xaa Val Glu Asn Gly Leu Ser Glu Gln Glu Ala Gln Lys Lys
305 310 315 320
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325 330 335
Lys Ile Asp Ser Tyr Gln Glu Pro Phe Thr His Ser Ala Pro Glu Ser
340 345 350
Ile Pro Asp Thr Phe Glu Asp Ala Val Asn Ile Leu Lys Pro Ser Thr
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          420          425          430
Lys Leu Thr Asp Gly Arg Val Phe Thr Pro Gly Gln Gly Asn Asn Val
          435          440          445
Tyr Ile Phe Pro Gly Val Ala Leu Ala Val Ile Leu Cys Asn Thr Arg
          450          455          460
His Ile Ser Asp Ser Val Phe Leu Glu Ala Ala Lys Ala Leu Thr Ser
465          470          475          480
Gln Leu Thr Asp Glu Leu Ala Gln Gly Arg Leu Tyr Pro Pro Leu
          485          490          495
Ala Asn Ile Gln Glu Val Ser Ile Asn Ile Ala Ile Lys Val Thr Glu
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Tyr Leu Tyr Ala Asn Lys Xaa Ala Phe Arg Tyr Pro Glu Pro Glu Asp
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Lys Ala Lys Tyr Val Lys Glu Arg Thr Trp Arg Ser Glu Tyr Asp Ser
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Val Ile Thr Glu

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 <212> PRT
 <213> homo sapiens polypeptdie

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Arg Thr Asn Lys Gly Met Ala Phe Thr Leu Gln Glu Arg Gln Met Leu
          35          40          45
Gly Leu Gln Gly Leu Leu Pro Pro Lys Ile Glu Thr Gln Asp Ile Gln
          50          55          60
Ala Leu Arg Phe His Arg Asn Leu Lys Lys Met Thr Ser Pro Leu Glu
65          70          75          80
Lys Tyr Ile Tyr Ile Met Gly Ile Gln Glu Arg Asn Glu Lys Leu Phe
          85          90          95
Tyr Arg Ile Leu Gln Asp Asp Ile Glu Ser Leu Met Pro Ile Val Tyr
          100          105          110
Thr Pro Thr Val Gly Leu Ala Cys Ser Gln Tyr Gly His Ile Phe Arg
          115          120          125
Arg Pro Lys Gly Leu Phe Ile Ser Ile Ser Asp Arg Gly His Val Arg
          130          135          140
Ser Ile Val Asp Asn Trp Pro Glu Asn His Val Lys Ala Val Val Val
145          150          155          160
Thr Asp Gly Glu Arg Ile Leu Gly Leu Gly Asp Leu Gly Val Tyr Gly
          165          170          175
Met Gly Ile Pro Val Gly Lys Leu Cys Leu Tyr Thr Ala Cys Ala Gly
          180          185          190
Ile Arg Pro Asp Arg Cys Leu Pro Val Cys Ile Asp Val Gly Thr Asp
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Asn Ile Ala Leu Leu Lys Asp Pro Phe Tyr Met Gly Leu Tyr Gln Lys
210          215          220

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 260 265 270
 Tyr Cys Thr Phe Asn Asp Asp Ile Gln Gly Thr Ala Ala Val Ala Leu
 275 280 285
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 His Lys Ile Leu Phe Leu Gly Ala Gly Glu Ala Ala Leu Gly Ile Ala
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 Ala Gln Lys Lys Ile Trp Met Phe Asp Lys Tyr Gly Leu Leu Val Lys
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 Gly Arg Lys Ala Lys Ile Asp Ser Tyr Gln Glu Pro Phe Thr His Ser
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 370 375 380
 Lys Pro Ser Thr Ile Ile Gly Val Ala Gly Ala Gly Arg Leu Phe Thr
 385 390 395 400
 Pro Asp Val Ile Arg Ala Met Ala Ser Ile Asn Glu Arg Pro Val Ile
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 Phe Ala Leu Ser Asn Pro Thr Ala Gln Ala Glu Cys Thr Ala Glu Glu
 420 425 430
 Ala Tyr Thr Leu Thr Glu Gly Arg Cys Leu Phe Ala Ser Gly Ser Pro
 435 440 445
 Phe Gly Pro Val Lys Leu Thr Asp Gly Arg Val Phe Thr Pro Gly Gln
 450 455 460
 Gly Asn Asn Val Tyr Ile Phe Pro Gly Val Ala Leu Ala Val Ile Leu
 465 470 475 480
 Cys Asn Thr Arg His Ile Ser Asp Ser Val Phe Leu Glu Ala Ala Lys
 485 490 495
 Ala Leu Thr Ser Gln Leu Thr Asp Glu Glu Leu Ala Gln Gly Arg Leu
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 Tyr Pro Pro Leu Ala Asn Ile Gln Glu Val Ser Ile Asn Ile Ala Ile
 515 520 525
 Lys Val Thr Glu Tyr Leu Tyr Ala Asn Lys Met Ala Phe Arg Tyr Pro
 530 535 540
 Glu Pro Glu Asp Lys Ala Lys Tyr Val Lys Glu Arg Thr Trp Arg Ser
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 Glu Tyr Asp Ser Leu Leu Pro Asp Val Tyr Glu Trp Pro Glu Ser Ala
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 Ser Ser Pro Pro Val Ile Thr Glu
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<210> 5

<211> 780

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<213> homo sapiens polynucleotide

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<223> mitochondrial NADP(+)-dependent malic enzyme 3 (NCBI accession number AY424278)

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<211> 2212

<212> DNA

<213> homo sapiens polynucleotide

<220>

<223> cytosolic malic enzyme 1

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cattcaatga tgatattcaa ggaacagcat ctggtgcagt tgcagggtct cttgcagctc 960
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<211> 636

<212> PRT

<213> mus musculus polypeptide

<220>

<223> amino acid sequence gi:28279474

<400> 10

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20          25          30
Pro Ala Gln Arg Ser Leu Tyr Arg Asp Val Met Leu Glu Asn Tyr Asn
35          40          45
His Leu Val Ser Leu Gly Tyr Gln Val Ser Lys Pro Glu Val Ile Phe
50          55          60
Lys Leu Glu Gln Gly Glu Glu Pro Trp Ile Ser Glu Lys Glu Ile Gln
65          70          75          80
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 130 135 140
 Ile Thr Thr Leu Glu Lys Lys Ile Glu Gln Asn Lys Val Gly Glu Asp
 145 150 155 160
 Ser Ser Leu Ser Thr Asp Leu Val Pro Gln Leu Asp Ile Ser Ser Ser
 165 170 175
 Ile Arg Pro Ser Asp Cys Lys Thr Phe Gly Asn Asn Leu Glu His Asn
 180 185 190
 Ser Glu Leu Val Thr Gln Ser Asn Ile Leu Ala Lys Lys Lys Pro Tyr
 195 200 205
 Lys Cys Asp Lys Cys Arg Lys Ser Phe Ile His Arg Ser Ser Leu Asn
 210 215 220
 Lys His Glu Lys Ile His Lys Gly Asp Pro Tyr Ser Asn Gly Thr Asp
 225 230 235 240
 Gln Gly Ala Gln Ser Gly Arg Lys His His Glu Cys Ala Asp Cys Gly
 245 250 255
 Lys Thr Phe Leu Trp Arg Thr Gln Leu Thr Glu His Gln Arg Ile His
 260 265 270
 Thr Gly Glu Lys Pro Phe Glu Cys Asn Val Cys Gly Lys Ala Phe Arg
 275 280 285
 His Ser Ser Ser Leu Gly Gln His Glu Asn Ala His Thr Gly Glu Lys
 290 295 300
 Pro Tyr Gln Cys Ser Leu Cys Gly Lys Ala Phe Gln Arg Ser Ser Ser
 305 310 315 320
 Leu Val Gln His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Arg Cys
 325 330 335
 Asn Leu Cys Gly Arg Ser Phe Arg His Ser Thr Ser Leu Thr Gln His
 340 345 350
 Glu Val Thr His Ser Gly Glu Lys Pro Phe Gln Cys Lys Glu Cys Gly
 355 360 365
 Lys Ala Phe Ser Arg Cys Ser Ser Leu Val Gln His Glu Arg Thr His
 370 375 380
 Thr Gly Glu Lys Pro Phe Glu Cys Ser Ile Cys Gly Arg Ala Phe Gly
 385 390 395 400
 Gln Ser Pro Ser Leu Tyr Lys His Met Arg Ile His Lys Arg Ser Lys
 405 410 415
 Pro Tyr Gln Ser Asn Asn Phe Ser Leu Ala Phe Val Pro Asn Thr Pro
 420 425 430
 Leu Pro Gln Gly Glu Gly Leu Leu Thr Glu Val Lys Ser Tyr His Cys
 435 440 445
 Asn Asp Cys Gly Lys Asp Phe Gly His Ile Thr Asp Phe Ser Glu His
 450 455 460
 Gln Arg Leu His Ala Gly Glu Asn Ser Tyr Gly Ser Glu Gln Thr Leu
 465 470 475 480
 Leu Gly Gln Gln Ser Leu Ser His Pro Arg Glu Lys Pro Tyr Gln Cys
 485 490 495
 Asn Val Cys Gly Lys Ala Phe Lys Arg Ser Thr Ser Phe Ile Glu His
 500 505 510
 His Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Glu Cys Gly
 515 520 525
 Glu Ala Phe Ser Arg Leu Ser Ser Leu Thr Gln His Glu Arg Thr His
 530 535 540
 Thr Gly Glu Lys Pro Tyr Glu Cys Ile Asp Cys Gly Lys Ala Phe Ser
 545 550 555 560
 Gln Ser Ser Ser Leu Ile Gln His Glu Arg Thr His Thr Gly Glu Lys
 565 570 575
 Pro Tyr Glu Cys Asn Glu Cys Gly Arg Ala Phe Arg Lys Lys Thr Asn
 580 585 590
 Leu His Asp His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ala Cys

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595 600 605
Lys Glu Cys Gly Arg Asn Phe Ser Arg Ser Ser Ala Leu Thr Lys His
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His Arg Val His Ala Arg Asn Lys Leu Gln Glu Ser
625 630 635

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<212> DNA
<213> mus musculus polynucleotide

<220>
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9301-237-228 Seqlist.txt

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<210> 13

<211> 292

<212> PRT

<213> mus musculus Polypeptide

<220>

<223> amino acid sequence hydroxysteroid 11-beta dehydrogenase

<400> 13

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20      25      30
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35      40      45
Glu Met Ala Tyr His Leu Ser Lys Met Gly Ala His Val Val Leu Thr
50      55      60
Ala Arg Ser Glu Glu Gly Leu Gln Lys Val Val Ser Arg Cys Leu Glu
65      70      75      80
Leu Gly Ala Ala Ser Ala His Tyr Ile Ala Gly Thr Met Glu Asp Met
85      90      95
Thr Phe Ala Glu Gln Phe Ile Val Lys Ala Gly Lys Leu Met Gly Gly
100     105     110
Leu Asp Met Leu Ile Leu Asn His Ile Thr Gln Thr Ser Leu Ser Leu
115     120     125
Phe His Asp Asp Ile His Ser Val Arg Arg Val Met Glu Val Asn Phe
130     135     140
Leu Ser Tyr Val Val Met Ser Thr Ala Ala Leu Pro Met Leu Lys Gln
145     150     155     160
Ser Asn Gly Ser Ile Ala Val Ile Ser Ser Leu Ala Gly Lys Met Thr
165     170     175
Gln Pro Met Ile Ala Pro Tyr Ser Ala Ser Lys Phe Ala Leu Asp Gly
180     185     190
Phe Phe Ser Thr Ile Arg Thr Glu Leu Tyr Ile Thr Lys Val Asn Val
195     200     205
Ser Ile Thr Leu Cys Val Leu Gly Leu Ile Asp Thr Glu Thr Ala Met
210     215     220
Lys Glu Ile Ser Gly Ile Ile Asn Ala Gln Ala Ser Pro Lys Glu Glu
225     230     235     240
Cys Ala Leu Glu Ile Ile Lys Gly Thr Ala Leu Arg Lys Ser Glu Val
245     250     255
Tyr Tyr Asp Lys Ser Pro Leu Thr Pro Ile Leu Leu Gly Asn Pro Gly
260     265     270
Arg Lys Ile Met Glu Phe Phe Ser Leu Arg Tyr Tyr Asn Lys Asp Met
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<210> 15

<211> 225

<212> PRT

<213> mus musculus polypeptide

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<223> amino acid sequence for Gpx3

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20      25      30
His Gly Gly Met Ser Gly Thr Ile Tyr Glu Tyr Gly Ala Leu Thr Ile
35      40      45
Asp Gly Glu Glu Tyr Ile Pro Phe Lys Gln Tyr Ala Gly Lys Tyr Ile
50      55      60
Leu Phe Val Asn Val Ala Ser Tyr Gly Leu Thr Asp Gln Tyr Leu Glu
65      70      75      80
Leu Asn Ala Leu Gln Glu Glu Leu Gly Pro Phe Gly Leu Val Ile Leu
85      90      95
Gly Phe Pro Ser Asn Gln Phe Gly Lys Gln Glu Pro Gly Glu Asn Ser
100     105     110
Glu Ile Leu Pro Ser Leu Lys Tyr Val Arg Pro Gly Gly Phe Val
115     120     125
Pro Asn Phe Gln Leu Phe Glu Lys Gly Asp Val Asn Gly Glu Lys Glu
130     135     140
Gln Lys Phe Tyr Thr Phe Leu Lys Asn Ser Cys Pro Pro Thr Ala Glu
145     150     155     160
Leu Leu Gly Ser Pro Gly Arg Leu Phe Trp Glu Pro Met Lys Ile His
165     170     175
Asp Ile Arg Trp Asn Phe Glu Lys Phe Leu Val Gly Pro Asp Gly Ile
180     185     190

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 <212> DNA
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9301-237-228 Seqlist.txt

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 Leu His Arg Ile Lys Asp Glu Val Gly Ala Pro Gly Ile Val Val Gly
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 Asp Val Glu Asn Arg Val Pro Cys Lys Pro Glu Thr Val Met Arg Ile
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 Gly Gly Lys Asn Asn Glu Lys Ser Asp Thr Pro Lys Ala Lys Ala Glu
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9301-237-228 Seqlist.txt
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9301-237-228 Seqlist.txt

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Ala Val Arg Gly Ser Val Ser Lys His Glu Phe Gln Ala Glu Thr Lys
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9301-237-228 Seqlist.txt

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<211> 3106

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9301-237-228 Seqlist.txt

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9301-237-228 Seqlist.txt

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<210> 22

<211> 524

<212> PRT

<213> mus musculus Polypeptide

<220>

<223> amino acid sequence for glycerol kinase (Gyk)

<400> 22

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20      25      30
Ala Glu Leu Leu Ser His His Gln Val Glu Ile Lys Gln Glu Phe Pro
35      40      45
Arg Glu Gly Trp Val Glu Gln Asp Pro Lys Glu Ile Leu Gln Ser Val
50      55      60
Tyr Glu Cys Ile Glu Lys Thr Cys Glu Lys Leu Gly Gln Leu Asn Ile
65      70      75      80
Asp Ile Ser Asn Ile Lys Ala Ile Gly Val Ser Asn Gln Arg Glu Thr
85      90      95
Thr Val Val Trp Asp Lys Val Thr Gly Glu Pro Leu Tyr Asn Ala Val
100      105      110
Val Trp Leu Asp Leu Arg Thr Gln Ser Thr Val Glu Asn Leu Ser Lys
115      120      125
Arg Ile Pro Gly Asn Asn Asn Phe Val Lys Ser Lys Thr Gly Leu Pro
130      135      140
Leu Ser Thr Tyr Phe Ser Ala Val Lys Leu Arg Trp Leu Leu Asp Asn
145      150      155      160
Val Lys Lys Val Gln Glu Ala Val Glu Glu Asn Arg Ala Leu Phe Gly
165      170      175
Thr Ile Asp Ser Trp Leu Ile Trp Ser Leu Thr Gly Gly Ile His Gly
180      185      190
Gly Val His Cys Thr Asp Val Thr Asn Ala Ser Arg Thr Met Leu Phe
195      200      205
Asn Ile His Ser Leu Glu Trp Asp Lys Glu Leu Cys Glu Phe Phe Gly
210      215      220
Ile Pro Met Glu Ile Leu Pro Asn Val Arg Ser Ser Ser Glu Ile Tyr
225      230      235      240
Gly Leu Met Lys Ala Gly Ala Leu Glu Gly Val Pro Ile Ser Gly Cys
245      250      255
Leu Gly Asp Gln Ser Ala Ala Leu Val Gly Gln Met Cys Phe Gln Asp
260      265      270
Gly Gln Ala Lys Asn Thr Tyr Gly Thr Gly Cys Phe Leu Leu Cys Asn
275      280      285
Thr Gly His Lys Cys Val Phe Ser Glu His Gly Leu Leu Thr Thr Val
290      295      300
Ala Tyr Lys Leu Gly Arg Asp Lys Pro Val Tyr Tyr Ala Leu Glu Gly

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9301-237-228 Seqlist.txt

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Ser Val Ala Ile Ala Gly Ala Val Ile Arg Trp Leu Arg Asp Asn Leu
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Gly Thr Ser Tyr Gly Cys Tyr Phe Val Pro Ala Phe Ser Gly Leu Tyr
          355          360          365
Ala Pro Tyr Trp Glu Pro Ser Ala Arg Gly Ile Ile Cys Gly Leu Thr
          370          375          380
Gln Phe Thr Asn Lys Cys His Ile Ala Phe Ala Ala Leu Glu Ala Val
385          390          395          400
Cys Phe Gln Thr Arg Glu Ile Leu Asp Ala Met Asn Arg Asp Cys Gly
          405          410          415
Ile Pro Leu Ser His Leu Gln Val Asp Gly Gly Met Thr Ser Asn Lys
          420          425          430
Ile Leu Met Gln Leu Gln Ala Asp Ile Leu Tyr Ile Pro Val Val Lys
          435          440          445
Pro Ser Met Pro Glu Thr Thr Ala Leu Gly Ala Ala Met Ala Ala Gly
          450          455          460
Ala Ala Glu Gly Val Gly Val Trp Ser Leu Glu Pro Glu Asp Leu Ser
465          470          475          480
Ala Val Thr Met Glu Arg Phe Glu Pro Gln Ile Asn Ala Glu Glu Ser
          485          490          495
Glu Ile Arg Tyr Ser Thr Trp Lys Lys Ala Val Met Lys Ser Ile Gly
          500          505          510
Trp Val Thr Thr Gln Ser Pro Glu Ser Gly Ile Pro
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<210> 23

<211> 3969

<212> DNA

<213> mus musculus polynucleotide

<220>

<223> nucleic acid sequence for NM_008509

<400> 23

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9301-237-228 Seqlist.txt

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<210> 24

<211> 474

<212> PRT

<213> mus musculus polypeptide

<220>

<223> amino acid sequence for Lipoprotein lipase

<400> 24

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20          25          30
Asp Phe Ser Asp Ile Glu Ser Lys Phe Ala Leu Arg Thr Pro Glu Asp
35          40          45
Thr Ala Glu Asp Thr Cys His Leu Ile Pro Gly Leu Ala Asp Ser Val
50          55          60
Ser Asn Cys His Phe Asn His Ser Ser Lys Thr Phe Val Val Ile His
65          70          75          80
Gly Trp Thr Val Thr Gly Met Tyr Glu Ser Trp Val Pro Lys Leu Val
85          90          95
Ala Ala Leu Tyr Lys Arg Glu Pro Asp Ser Asn Val Ile Val Val Asp

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9301-237-228 Seqlist.txt

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Lys Leu Val Gly Asn Asp Val Ala Arg Phe Ile Asn Trp Met Glu Glu		
130	135	140
Glu Phe Asn Tyr Pro Leu Asp Asn Val His Leu Leu Gly Tyr Ser Leu		
145	150	155
Gly Ala His Ala Ala Gly Val Ala Gly Ser Leu Thr Asn Lys Lys Val		
165	170	175
Asn Arg Ile Thr Gly Leu Asp Pro Ala Gly Pro Asn Phe Glu Tyr Ala		
180	185	190
Glu Ala Pro Ser Arg Leu Ser Pro Asp Asp Ala Asp Phe Val Asp Val		
195	200	205
Leu His Thr Phe Thr Arg Gly Ser Pro Gly Arg Ser Ile Gly Ile Gln		
210	215	220
Lys Pro Val Gly His Val Asp Ile Tyr Pro Asn Gly Gly Thr Phe Gln		
225	230	235
Pro Gly Cys Asn Ile Gly Glu Ala Ile Arg Val Ile Ala Glu Arg Gly		
245	250	255
Leu Gly Asp Val Asp Gln Leu Val Lys Cys Ser His Glu Arg Ser Ile		
260	265	270
His Leu Phe Ile Asp Ser Leu Leu Asn Glu Glu Asn Pro Ser Lys Ala		
275	280	285
Tyr Arg Cys Asn Ser Lys Glu Ala Phe Glu Lys Gly Leu Cys Leu Ser		
290	295	300
Cys Arg Lys Asn Arg Cys Asn Asn Leu Gly Tyr Glu Ile Asn Lys Val		
305	310	315
Arg Ala Lys Arg Ser Ser Lys Met Tyr Leu Lys Thr Arg Ser Gln Met		
325	330	335
Pro Tyr Lys Val Phe His Tyr Gln Val Lys Ile His Phe Ser Gly Thr		
340	345	350
Glu Asn Gly Lys Gln His Asn Gln Ala Phe Glu Ile Ser Leu Tyr Gly		
355	360	365
Thr Val Ala Glu Ser Glu Asn Ile Pro Phe Thr Leu Pro Glu Val Ser		
370	375	380
Thr Asn Lys Thr Tyr Ser Phe Leu Ile Tyr Thr Glu Val Asp Ile Gly		
385	390	395
Glu Leu Leu Met Met Lys Leu Lys Trp Met Ser Asp Ser Tyr Phe Ser		
405	410	415
Trp Pro Asp Trp Trp Ser Ser Pro Ser Phe Val Ile Glu Arg Ile Arg		
420	425	430
Val Lys Ala Gly Glu Thr Gln Lys Lys Val Ile Phe Cys Ala Arg Glu		
435	440	445
Lys Val Ser His Leu Gln Lys Gly Lys Asp Ser Ala Val Phe Val Lys		
450	455	460
Cys His Asp Lys Ser Leu Lys Lys Ser Gly		
465	470	